

WHAT IS CLAIMED IS:

1. A method for preventing damage to tire electronics during tire inspection, comprising the steps of:

providing a high-voltage power supply;

providing a tire containing at least one tire electronics device;

5 providing a conductive wire;

coupling one end of the conductive wire to the high-voltage supply;

configuring the other end of the conductive wire for contact with the tire; and

providing a physical barrier in proximity to the at least one tire electronics device, whereby damage to the tire electronics from effects of the high-voltage source is avoided.

2. The method of claim 1, wherein the step of configuring comprises providing the other end of the conductive wire with a plurality of wires.

3. The method of claim 1, wherein the step of providing a physical barrier comprises providing an insulative wall such that contact with the tire electronics device by the end of the conductive wire configured for contact with the tire is inhibited.

4. The method of claim 2, wherein the insulative wall at least partially surrounds the at least one tire electronics device.

5. The method of claim 4, wherein the insulative wall surrounds the at least one tire electronics device.

6. The method of claim 1, wherein the step of providing a physical barrier comprises covering the tire electronics device with an insulative material.

7. The method of claim 1, wherein the step of providing a physical barrier comprises covering the tire electronics device with a conductive material.

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8. The method of claim 1, wherein the step of providing a physical barrier comprises covering the tire electronics device with a resistive material.

9. A method for preventing damage to tire electronics during tire inspection, comprising the steps of:

providing a high-voltage power supply;

providing a tire containing at least one tire electronics device;

5 providing a conductive wire;

coupling one end of the conductive wire to the high-voltage supply;

configuring the other end of the conductive wire for contact with the tire; and

controlling the effective energy impressed on the at least one tire electronics device, whereby damage to the tire electronics from effects of the high-voltage source is avoided.

10. The method of claim 9, wherein the step of controlling comprises controlling the effective energy supplied from the high-voltage power supply.

11. The method of claim 10, wherein the step of controlling comprises reducing the effective energy of the high-voltage power supply at least when the end of the wire configured for contact with the tire is proximate to the at least one tire electronics device.

12. The method of claim 11, wherein the step of controlling comprises manually reducing the effective energy of the high-voltage power supply at least when the end of the wire configured for contact with the tire is proximate to the at least one tire electronics device.

13. The method of claim 11, wherein the step of controlling further comprises the steps of:

providing a sensor having an output signal responsive to proximity of the wire configured for contact with the tire to the at least one tire electronics device; and

5 automatically reducing the effective energy of the high-voltage power supply in response to the output signal.

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14. The method of claim 11, wherein the step of controlling further comprises the steps of:

configuring the at least one tire electronics device to provide an output signal responsive to proximity of the wire configured for contact with the tire to the at least one tire electronics device; and

automatically reducing the effective energy of the high-voltage power supply in response to the output signal.

15. The method of claim 10, wherein the step of controlling comprises configuring the high-voltage power supply to supply a series of relatively short high-voltage pulses sufficiently separated in time to produce an effective low-energy waveform, whereby the effective energy provided from the high-voltage power supply is insufficient to damage the at least one tire electronics device.

16. The method of claim 9, wherein the step of controlling the effective energy comprises applying a potential substantially equivalent to the potential of the high-voltage power supply to the at least one tire electronics device, whereby substantially no voltage gradient will be produced between the at least one tire electronics device and the end of the wire configured for contact with the tire.

17. The method of claim 9, wherein the step of controlling the effective energy comprises incorporating one or more static dissipative elements within the at least one tire electronics device.

18. The method of claim 17, wherein the one or more static dissipative elements are selected from the group consisting of high-value resistors, spark gaps, non-linear resistors, varistors, capacitors, neon lamps, and valve block materials.

19. The method of claim 9, wherein the step of controlling the effective energy comprises incorporating insulating pathways within the at least one tire electronics device, thereby inhibiting arc formation.

20. The method of claim 9, wherein the step of controlling the effective energy comprises surrounding the at least one tire electronics device with a conductive guard ring.

21. The method of claim 9, wherein the step of controlling the effective energy comprises configuring at least a portion of the other end of the conductive wire for contact with the tire so as to avoid contact with the at least one tire electronics device.